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(Enteral feeding)

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(TPN)

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(Percutaneous Endoscopic Gastrostomy)

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GIF-Q145 (EVIS-EXERA)

(Pushing)

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PEG-24

(Wilson-Cook)

Bolster

Bolster

(exit number)

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ICU

(Peristomal Leakage)

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Buried Bumper

Bolster

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Buried Bumper

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() (Larson)

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- (Wilson-Cook)
Bolster

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References:

1. CREST - Clinical Resource Efficiency Support Team. Guidelines for the Management of Enteral Tube Feeding in Adults, (Accessed Feb 12, 2008, at http://www.crestni.org.uk/publications/tube_feeding_guidelines.pdf).
2. Kirby DF, DeLegge MH, Fleming RC. American Gastroenterological Association Technical Review on Tube Feeding for Enteral Nutrition. *Gastroenterology* 1995; 108:1282-301.
3. Marik PE, Zaloga GP. Early enteral nutrition in acutely ill patients: A systematic review. *Crit Care Med* 2001; 29: 2264-70.
4. Marik PE, Zaloga GP. Gastric versus post-pyloric feeding: a systematic review. *Crit Care Med* 2003; 7:46-51.
5. Park RH, Allison MC, Lang J, et al. Randomised comparison of percutaneous endoscopic gastrostomy and nasogastric tube feeding in patients with persisting neurological dysphagia. *BMJ* 1992; 304:1406-9.
6. Angelini F. Technology, development, stewardship and ethical considerations. *Ann N Y Acad Sci* 1988; 534:858-62.
7. McClave SA, Snider HL, Spain DA. Preoperative issues in clinical nutrition. *Chest* 1999; 115 Suppl 5:64-70.
8. Huckleberry Y. Nutritional support and the surgical patient. *Am J Health Syst Pharm* 2004; 61:671-82.
9. Piquet MA, Ozsahin M, Larpin I, et al. Early nutritional intervention in oropharyngeal cancer patients undergoing radiotherapy. *Support Care Cancer* 2002;10:502-4.
10. Callahan CM, Haag KM, Buchanan NN, et al. Decision-making for percutaneous endoscopic gastrostomy among older adults in a community setting. *J Am Geriatr Soc* 1999; 47:1105-9.
11. Callahan CM, Haag KM, Weinberger M, et al. Outcomes of percutaneous endoscopic gastrostomy among older adults in a community setting. *J Am Geriatr Soc* 2000; 48:1048-54.
12. Bannerman E, Pendlebury J, Phillips F, et al. A cross-sectional and longitudinal study of health-related quality of life after percutaneous gastrostomy. *Eur J Gastroenterol Hepatol* 2000; 12:1101-9.
13. Ciocon JO, Silverstone FA, Graver LM, et al. Tube feedings in elderly patients. Indications, benefits, and complications. *Arch Intern Med* 1988; 148:429-33.
14. Kaw M, Sekas G. Long-term follow-up of consequences of percutaneous endoscopic gastrostomy (PEG) tubes in nursing home patients. *Dig Dis Sci* 1994; 39:738-43.
15. Bourdel-Marchasson I, Dumas F, Pinganaud

- G, et al. Audit of percutaneous endoscopic gastrostomy in long-term enteral feeding in a nursing home. *Int J Qual Health Care* 1997; 9:297-302.
16. Weaver JP, Odell P, Nelson C. Evaluation of the benefits of gastric tube feeding in an elderly population. *Arch Fam Med* 1993; 2:953-6.
17. Wanklyn P, Cox N, Belfield P. Outcome in patients who require a gastrostomy after stroke. *Age Ageing* 1995; 24:510-4.
18. James A, Kapur K, Hawthorne AB. Long-term outcome of percutaneous endoscopic gastrostomy feeding in patients with dysphagic stroke. *Age Ageing* 1998; 27:671-6.
19. D'Amelio LF, Hammond JS, Spain DA, et al. Tracheostomy and percutaneous endoscopic gastrostomy in the management of the head-injured trauma patient. *Am Surg* 1994;60:180-5.
20. Harbrecht BG, Moraca RJ, Saul M, et al. Percutaneous endoscopic gastrostomy reduces total hospital costs in head-injured patients. *Am J Surg* 1998; 176:311-4.
21. Chio A, Finnochiaro E, Meineri P, et al. Safety and factors related to survival after percutaneous endoscopic gastrostomy in ALS. *Neurology* 1999; 53:1123-5.
22. Kasarskis EJ, Scarlata D, Hill R, et al. A retrospective study of percutaneous endoscopic gastrostomy in ALS patients during BDNF and CNTF trials. *J Neurol Sci* 1999; 169:118-25.
23. Gauderer MW, Ponsky JL, Izant RJ, Jr. Gastrostomy without laparotomy: a percutaneous endoscopic technique. *J Pediatr Surg* 1980; 15:872-5.
24. Taylor CA, Larson DE, Ballard DJ, et al. Predictors of outcome after percutaneous endoscopic gastrostomy: a community-based study. *Mayo Clin Proc* 1992; 67:1042-9.
25. Larson DE, Burton DD, Schroeder KW, et al. Percutaneous endoscopic gastrostomy. Indications, success, complications, and mortality in 314 consecutive patients. *Gastroenterology* 1987;93:48-52.
26. Sharma VK, Howden CW. Meta-analysis of randomized, controlled trials of antibiotic prophylaxis before percutaneous endoscopic gastrostomy. *Am J Gastroenterol* 2000; 95:3133-6.
27. Ahmad I, Mouncher A, Abdoolah A, et al. Antibiotic prophylaxis for percutaneous endoscopic gastrostomy--a prospective, randomised, double-blind trial. *Aliment Pharmacol Ther* 2003;18:209-15.
28. Jafri NS, Mahid SS, Minor KS et al. Meta-analysis: antibiotic prophylaxis to prevent peristomal infection following percutaneous endoscopic gastrostomy. *Aliment Pharmacol Ther* 2007;25:647-56.
29. Stathopoulos G, Rudberg MA, Harig JM. Subcutaneous emphysema following PEG. *Gastrointest Endosc* 1991; 37:374-6.
30. Wiesen AJ, Sideridis K, Fernandes A, et al. True incidence and clinical significance of pneumoperitoneum after PEG placement: a prospective study. *Gastrointest Endosc* 2006;64:886-9.
31. Dulabon GR, Abrams JE, Rutherford EJ. The incidence and significance of free air after percutaneous endoscopic gastrostomy. *Am Surg* 2002;68:590-3.
32. Ubogu EE, Zaidat OO. Rectus sheath hematoma complicating percutaneous endoscopic gastrostomy. *Surg Laparosc Endosc Percutan Tech* 2002; 12:430-2.
33. Kazi S, Gunasekaran TS, Berman JH, Kavin H, Kraut JR. Gastric mucosal injuries in children from inflatable low-profile gastrostomy tubes. *J Pediatr Gastroenterol Nutr* 1997; 24:75-8.
34. Lau G, Lai SH. Fatal retroperitoneal haemorrhage: an unusual complication of percutaneous endoscopic gastrostomy. *Forensic Sci Int* 2001; 116:69-75.
35. Metheny N, Eisenberg P, McSweeney M. Effect of feeding tube properties and three irrigants on clogging rates. *Nurs Res* 1988; 37:165-9.
36. Fischer LS, Bonello JC, Greenberg E. Gastrostomy tube migration and gastric outlet obstruction following percutaneous endoscopic gastrostomy. *Gastrointest Endosc* 1987; 33:381-2.
37. Chong VH. Gastric outlet obstruction by gastrostomy tube balloon. *Indian J Gastroenterol* 2004; 23:80.
38. Klein S, Heare BR, Soloway RD. The "buried bumper syndrome": a complication of percutaneous endoscopic gastrostomy. *Am J Gastroenterol* 1990; 85:448-51.
39. Saltzberg DM, Anand K, Juvan P, et al. Colocutaneous fistula: an unusual complication of percutaneous endoscopic gastrostomy. *JPEN J Parenter Enteral Nutr* 1987;11:86-7.
40. Williams E, Sabol DA, Delege M. Small bowel obstruction caused by bowel wall hematoma after PEG. *Gastrointest Endosc* 2003; 57:273-4.
41. Cave DR, Robinson WR, Brotschi EA. Necrotizing fasciitis following percutaneous endoscopic gastrostomy. *Gastrointest Endosc* 1986; 32:294-6.
42. Martindale R, Witte M, Hodges G, et al.

-
- Necrotizing fasciitis as a complication of percutaneous endoscopic gastrostomy. *JPEN J Parenter Enteral Nutr* 1987; 11:583-5.
43. Chaer RA, Rekkas D, Trevino J, et al. Intrahepatic placement of a PEG tube. *Gastrointest Endosc* 2003; 57:763-5.
44. Chuang CH, Chen CY. Gastric herniation through PEG site. *Gastrointest Endosc* 2003; 58:416.
45. Honjo S. A mother's complaints of overeating by her 25-month-old daughter: a proposal of anorexia nervosa by proxy. *Int J Eat Disord* 1996; 20:433-7.
46. Khurana V, Singh T. Percutaneous endoscopic gastrostomy site metastasis in esophageal cancer. *Gastrointest Endosc* 2005; 62:612.
47. Mincheff TV. Metastatic spread to a percutaneous gastrostomy site from head and neck cancer: case report and literature review. *JSLs* 2005; 9:466-71.